

HYMENOPTERA

OF THE

Dutch Expedition to New Guinea in 1904 and 1905.

PART II : PARASITIC HYMENOPTERA.

BY

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In the Res. de l'Exp. scient. Néerl. à la Nouv. Guinée, I, p.p. 41—65 I described and enumerated the Parasitic Hymenoptera, Fossores and Vespidae, of the Dutch Expedition to New Guinea in 1903. In that paper few parasitic species were described. The Explorers of the second Expedition have been more fortunate, as will be seen from a perusal of the present account of the species collected.

Chalcididae.

Antrocephalus nigripennis sp. nov.

Black; the antennæ except the apical 3 or 4 joints, the legs and the abdomen, bright ferruginous: the wings dark fuscous, the nervures black. ♀.

Length 8 m.m.

Merauke.

Head strongly punctured, the inner orbits margined, the margin curving roundly above the anterior ocellus; the sides

of the antennal depression strongly punctured; antennal tubercles smooth and shining.

Clypeus roundly narrowed towards the apex, which is rufous. Thorax strongly and closely punctured; the parapsidal furrows deep; the pronotum is more closely punctured than the mesonotum, and the latter than the scutellum; the latter is bilobate at the apex; the lobes are not very prominent. Metanotum coarsely, irregularly reticulated; its central area is obliquely narrowed at the base; shortly above its middle are 2 stout, irregular transverse keels, the lower one being also in the middle of the area; the lower part is of equal width, the upper part roughened, the lower smooth; the sides of the metanotum become gradually, roundly narrowed, the base being dilated. Abdomen sessile, smooth; as long as the thorax; the last segment does not project much; the apical segments are covered with rufous pubescence; the ventral more densely, with longer rufous pubescence.

Except at the base above and the apex below the mesopleuræ are stoutly striated in the centre; the part bordering the striated part at the base is roundly curved; on the lower part of the border are, above, 3 large round foveæ, below, 4 more widely separated ones, these being edged at the apex by a shining border. The keel on the hind femora is black; it occupies the basal two-thirds; the part inside the keel is densely covered with white pubescence. The hind coxæ have their upper basal half black. The punctures on the pronotum are closer and run more into each other than do those on the mesonotum. There is a smooth, shining line on the malar space. The anterior coxæ are black, not red like the others. The antennæ are 12-jointed and are placed immediately over the clypeus. Hind tibiæ slightly, roundly dilated on the inner-side; the end bears a stout black, and a narrower red spine; they are about one third longer than the tarsi; behind the basal 2 joints of the tarsi are of equal length.

This species agrees fairly well with Kirby's definition of *Antrocephalus*, but not quite so well with that of Kieffer (Berl. Ent. Zeit. XLIX, 24).

Evaniidæ.

Evania meraukensis sp. nov.

Black, densely covered with silvery pubescence, which is very dense on the sternum and apex of metanotum. Base of thorax transverse, its sides angled, not rounded. Hind tibiæ spinose, the spines distinct, longish; the longer does not reach to the middle of the metatarsus. Metasternal process short, thick, slightly diverging; there is a stout longitudinal keel behind it. Abdominal petiole stoutly, closely, irregularly striated, the striæ more or less twisted. Wings hyaline, the nervures black. ♀.

Length 7 m.m.

Merauke.

Flagellum of antennæ opaque below, covered with dark velvety pile; it is as long as the 3rd joint, which is distinctly longer than the 4th, and that is a little longer than the 5th. Eyes distinctly converging above; the hinder ocelli are separated from each other by about double the distance they are from the eyes. Front and vertex rugosely punctured, the front more strongly than the vertex. Face rugosely punctured, more or less striated below. Clypeus sparsely punctured above, almost smooth below, where it becomes gradually roundly narrowed to a point. Mandibles shining, finely, closely punctured. Occiput with a sharp narrow margin. Mesonotum strongly, but not closely punctured; the furrows are narrow, but distinct; the scutellum is somewhat similarly punctured, but less closely in the middle at the base. Metanotum closely reticulated, the keels stout, the apical slope is roundly, but not deeply hollowed, it is reticulated above and at the sides,

but not closely or strongly; the centre below is transversely striated, the striæ stout, irregular. Propleuræ opaque, aciculated and bearing some large, round punctures; there is a large, smooth, shining, triangular space on the top of the mesopleuræ, the rest is closely, strongly punctured, the punctures round, the upper apical oblique hollow is irregularly obliquely striated; the upper part of the metapleuræ has 2 rows of obliquely sloped striæ, the upper running more into reticulations than the lower; the raised lowerpart bears round, deep punctures.

The hind coxæ, except at the apex above, are closely and strongly punctured; the malar space is as long as the 5th antennal joint; it is rugosely punctured. Palpi black, as are also the calcaria.

This species is closely allied to *E. Beauforti* of which I only know the ♂, as I only know the ♀ of the present species; the 2 may be separated by the following points:

Clypeus rugosely punctured, not narrowed to a point, the face with a longitudinal keel in the centre above, sides of metanotum widely reticulated, the middle densely covered with long white pubescence; metasternal process broad, hollowed, twice longer than broad.

Beauforti Cam.

Clypeus at apex almost smooth, narrowed to a point, the face without a longitudinal keel in the centre above, sides of metanotum not widely reticulated, the centre not densely pubescent; metasternal process not hollowed, rounded, punctured, not twice longer than broad.

Meraukensis.

Stephanidæ.

Stephanus insidicator Smith?

There is a ♂ in the collection from Etna Bay, which is probably the *Megischus insidicator*, Smith from Mysol (Journ. Linn. Soc. VII, 7, ♂). It at any rate fits Smith's description so far as that goes; but as the Smithian description is not

good I give a more extended one of the Etna Bay specimen. ♂. Length 24 m.m. Black, the head and basal two joints of the antennæ red, the outer eye orbits tinged with yellowish; the 4 anterior tibiæ and tarsi rufo-testaceous, darker coloured behind, tarsi white, slightly tinged with rufous; wings fuscous hyaline, tinged with violaceous, the nervures and stigma black. Temples, sides and hinder part of the vertex smooth, shining, impunctate, the rest in the centre transversely striated; the anterior part is much more strongly and widely striated, in the centre, between the eyes, is a longitudinal furrow; the last keel is behind the anterior ocellus; from the latter 2 keels run below; they converge below and have a less distinct keel between. Front coarsely, transversely rugosely reticulated. Labrum rounded, yellowish. Basal half of mandibles yellow, tinged with red; the palpi dark fuscous, rufous at the base. The 2nd joint of antennæ is not quite half the length of the 3rd, the 4th is slightly, but distinctly, longer than the latter, the 5th is still longer, being as long as the 2nd and 3rd united. Apex of pronotum (forming the lesser part) smooth, shining, the rest closely, somewhat strongly transversely striated and with a distinct longitudinal furrow down the middle. Mesonotum deeply punctured, the lateral punctures run into each other; there is a short longitudinal furrow in the centre of the apex. Scutellum smooth, sparsely, weakly punctured round the sides and base. Metanotum with round, deep, clearly separated punctures, the centre smooth, the smooth part twice wider than long; the apex is transversely striated. Propleuræ with a few punctures in the centre, the apex with a few oblique striæ. Mesopleuræ aciculated, smooth above, the centre and lower part with small rounded punctures; the depressed upper part of metapleuræ is smooth; irregularly striated on the apical half; the raised central part bears round, scattered punctures. Abdomen (including the petiole) smooth and shining; the petiole is not quite so long as the following 2 segments

united. Hind coxae at the base somewhat strongly, but not closely striated; the middle with some widely separated striæ; the apex more closely and less strongly punctured than the base; the basal tooth on the femora is longer and stouter than the apical; between them are 3 stout, short, rounded teeth close to each other, followed by 3 shorter, less distinct and more widely separated ones; below the hind tibiæ bear some curved stout striæ.

It may be that this is the ♂ of *S. sulaifrons* Schlett., (Berl. Ent. Soc. XXXIII, 110) from the Philippines; but I am inclined to regard the 2 as distinct.

BRACONIDÆ.

Agathidinæ.

Euaqathis variceps sp. nov.

Luteous, the antennæ, upper inner orbits broadly, the hinder part of the vertex, occiput above, more or less of the upper part of the face, a broad mark on the malar space, the 3 or 4 apical abdominal segments above, the apex of the hinder tibiæ broadly (about the apical fourth) and the hinder tarsi, except at the extreme base, black. Wings uniformly dark fuscous, except for an obscure cloud in the 1st cubital cellule and one on the outside of the recurrent nervure. ♂.

Length 7—8 m.m.

Etna Bay.

Face pilose, the hairs issuing from punctures. Palpi and mandibles pale testaceous, the palpi covered with pale pubescence. Mesonotum closely punctured, the furrows widely crenulated. Scutellar depression smooth, with a stout keel down the middle. The central area of the metanotum extends from the base to the apex, narrowed towards the base and apex; it bears some stout transverse keels; a stout keel branches

off laterally from its apex to the sides of the segment; the central area is bordered by a larger, broader one, slightly narrowed towards the apex and shorter than the central; the outerside of the metanotum is bordered by a keel. Areolet 4-angled, not much narrowed in front; the 2nd transverse cubital nervure is thickened in front.

This is probably a variable species as regards the quantity of black and rufous colour on the head. There seems to be also some difference in the keels on the median segment as regards their stoutness. The head may be almost all black.

Agathis etnaella sp. nov.

Rufous, the antennæ, head, median segment, and the hind tibiæ and tarsi, black; the rest of the hind legs reddish brown; wings fuscous, a hyaline cloud across from the base of the stigma; the nervures and stigma black, the base of the latter ochraceous.

Length 7 m.m. ♂.

Etna Bay.

Median segment densely covered with longish white pubescence; its sides are tinged with brown; its central area extends from the base to the apex and is narrowed towards the base; it bears some stout transverse keels; the lateral areae are stoutly irregularly striated transversely; the spiracular are also stoutly irregularly striated. Pro- and mesothorax weakly punctured, sparsely, shortly pilose. Middle of clypeus brownish. Labrum and palpi yellow. Parapsidal furrows narrow, shallow; the mesopleural furrow narrow, smooth. Areolet oblique, slightly narrowed in front; the 2nd transverse cubital nervure is slightly dilated in front on the outerside. The apical abdominal segments are infuscated; there is a fuscous testaceous band on the base of the hinder tibiæ; the calcaria are dark testaceous.

Agathis papuana sp. nov.

Rufo-luteous, the antennæ, sides of the face broadly above, the greater part of the front and vertex, of the malar space, the upper part of the occiput, almost the apical third of the hind tibiæ and the hind tarsi, except at the extreme base, black; the hind calcaria dark rufous; wings dark fuscous; the base to the transverse basal and the transverse median, an irregular band extending from the stigma to the opposite side of the wing, it becoming narrowed behind, the front of it including the areolet, the base of the hind wing to the radial nervure and an irregular one, narrowed behind, beyond it, yellowish hyaline; the base of the stigma is pale yellow. ♂ and ♀.

Length 8 m.m., terebra 4 m.m.

Etna Bay.

The light coloured parts of the head are rufous; an oblique keel runs from the ocelli to the antennæ. Upper part of face closely and strongly, the lower weakly punctured. There is a red tubercle above the antennæ. Mesonotum trilobate; there is a depression at the apex of the middle lobe. Scutellar depression large, deep; there is a narrow keel in its centre. Apex of scutellum rounded above and with an oblique slope. Post-scutellum stoutly keeled, roundly narrowed and raised at the apex. Base of metanotum depressed; the central area is shortly, obliquely narrowed at the base; the narrowed apical part is longer and more sharply pointed; in the centre are 2 transverse keels, and there is another at the commencement of the narrowed apical part; at the base there is a short longitudinal keel; the outside of the metanotum is bordered by a stout keel and this, at its apex, is united to the central area by a transverse one; the area thus formed has 2 widely separated transverse keels in the middle; there is a large wide spiracular area with a small triangular area at its apex. Pro-

and mesopleuræ weakly, the metapleuræ closely and strongly punctured. Areolet oblique, not much narrowed in front; there is a slight indication of a stump on the 2nd transverse cubital nervure.

Birōia nigricornis sp. nov.

Reddish-yellow, the flagellum of antennæ, the back of the abdomen and the hind calcaria and tarsi, black, the sides and the ventral surface of the basal 2 abdominal segments white; wings fuscous hyaline, the nervures and stigma black. ♂.

Length 8 m.m.

Etna Bay.

Antennæ much longer than the body; the flagellum brownish beneath; the scape sparsely covered with black hair. Face strongly, but not closely punctured; the clypeus is weakly punctured above, impunctate below. Mandibular teeth black; the palpi covered with white hair. Thorax thickly covered with pale pubescence; mesonotum closely punctured; the scutellum, except on the apical slope (which is smooth), is more closely punctured. Metanotum smooth; on its base are 5 areæ; the central is longer than broad, roundly narrowed at the base, transverse at the apex; the lateral 2 are wider and of equal width throughout; on the apical slope are also 5 areæ; the central is smaller than the others and almost triangular; the others are square. Propleuræ smooth, weakly punctured round the edges; there is [a broken keel in the basal central area. Meso- and metapleuræ closely and strongly punctured. Abdomen not much longer than the thorax, smooth and shining; the apical segments covered with white pubescence. Areolet narrowed in front, but the nervures clearly separated; the 2nd nervure not broken by a stump; the transverse median nervure interstitial.

The areolet is not so square as it is in *B. flavipennis* as figured by Enderlein, Zool. Anzeiger, XXVIII, p. 451.

Trigonophatnus gen. nov.

Eyes large, reaching quite close to the base of the mandibles, the malar space being very short; they are parallel and are incised, but not deeply opposite the antennæ. Temples short, obliquely narrowed. Clypeus separated from the face. Mesonotum trilobate. Metanotum with an elongated area in the centre, its basal half becomes gradually narrowed to a sharp point; the spiracles are small, oval, about twice longer than wide. Pleuræ without furrows. Basal two segments of abdomen keeled down the middle; the suturiform articulation deep, moderately wide, crenulated; hypopygium large, bluntly cultriform. Transverse median nervure received very slightly beyond the transverse basal, almost interstitial; the recurrent is received at the apex of the 1st cubital cellule, almost interstitial. First abscissa of radius not one fourth of the length of the second, about half the length of the 2nd transverse cubital nervure. Ocelli large, placed in a triangle, the hinder as near to the eyes as they are to each other. The recurrent is slightly roundly curved.

This genus, by its large eyes, comes near to *Megarhogas* Szép., which appears to be sufficiently distinguished from it by the elliptical metanotal spiracles, by the mesopleuræ having a furrow and by the innerside of the stigma being half the length of the outer, instead of being of equal length. The hinder coxæ are long, obliquely depressed on the outerside; the calcaria are short as usual with the *Rhogadinæ*.

Trigonophatnus albobalteatus sp. nov.

The antennæ, head and 3rd and following segments of the abdomen black, the basal two abdominal segments, the apices of the others and the greater part of the ventral surface, white; the thorax, palpi and 4 anterior legs rufous; the hind

coxæ rufous, largely black above, the trochanters and femora to near the apex black, the apex rufo-testaceous, the tibiæ blackish fuscous, testaceous at the base, the tarsi dark testaceous. Wings light fuscous, the base of costa and the stigma testaceous. ♀.

Length 9 m.m.

Merauke.

Head, pro- and mesothorax smooth; the metanotum between the keels stoutly, irregularly transversely striated; the rest with deep, clearly separated punctures; the pleuræ with weak scattered punctures; the segment is thickly covered with long, white pubescence. Abdomen, especially on the apical and ventral segments, thickly covered with long white pubescence. Scutellar depression deep, wide, a keel in the middle.

Iphiaulax meraukensis sp. nov.

Black, the thorax and the fore coxæ red; the anterior femora and tibiæ obscure red in front, the trochanters of a brighter red, wings dark, uniformly fuscous, the nervures and stigma black. ♀.

Length 6 m.m.; terebra 4 m.m.

Merauke.

Abdomen elongated ovate; the 1st segment dull rufous at the base; its centre bears a stout longitudinal keel; its middle, on either side of the keel, is strongly punctured; the lateral depressions are irregularly transversely striated. The area on the second segment is smooth, shining and elongated triangular at the base; its keel is not so shining, broad at the base, becoming gradually narrowed to a sharp point; it does not extend to the apex of the segment; on either side of it are 3 or 4 stout irregular transverse keels, bordered, on the outer side, by 2 roundly curved ones; the longitudinal depression outside these is deep and strongly striated; except the apical,

the segments are closely strongly longitudinally striated; the suturiform articulation is deep, wide, crenulated; there is a deep crenulated furrow on the base of the 3rd and 4th segments, and less closely crenulated ones on their apices.

The stigma at the base along the 1st cubital cellule is pale fuscous; the recurrent nervure is received in the apex of the 1st cubital cellule. The face is opaque, almost rugosely punctured; the oral region and the clypeus are dark red; there is a narrow interrupted red line round the eyes; the apical 2 segments of the abdomen are white above. Scutellar depression crenulated. The sides and base of the abdomen are white below; the black is not continuous.

Iphiaulax platynotus sp. nov.

Luteous, the head and antennæ black; the hind tarsi infuscated; the oral region, mandibles except at the apex and a short narrow line on the middle of the outer orbits and 2 lines in front rufous; wings fuscous, the nervures and costa black, the stigma, except at the apex, ochraceous. ♀.

Length of body and ovipositor 9 m.m.

Etny Bay.

Abdomen as long as the head and thorax united, longish ovate, wider than the thorax; the central area of 1st abdominal segment longish ovate, roundly narrowed at the base and apex, its basal half smooth, the apex strongly closely longitudinally striated; it is bordered by some oblique striæ. The area on centre of 2nd segment triangular at the base, smooth, the keel narrow, reaching to the base of the apical third; it is bordered by a depression which bears some stout transverse striæ; the segment is almost smooth at the base of the keel; the rest irregularly striated, more finely, regularly and closely at the sides of the apex; the apex in the middle is smooth. The 1st transverse furrow is wide, deep,

curved and crenulated in the middle; its apical lateral branch is narrow, crenulated; the 2nd transverse furrow is narrower; the 3rd is still narrower and is interrupted in the centre; there is a narrow, crenulated transverse one on the apex of the 3rd segment. Face opaque, finely rugosely punctured; there is a Δ -shaped depression on the middle of the apical half. Front depressed below; there is a stout oblique mark above each antenna. Mesonotum flat, almost depressed at the apex. Furrow at the base of scutellum deep, transverse. Median segment covered with longish fuscous pubescence. Antennal scape slender, not dilated at the apex. The 2nd abscissa of radius as long as the 3rd; the 2nd cubital cellule is 3 times longer than wide.

Bracon xanthocephalus sp. nov.

Antennæ, spot covering ocelli, pro- and mesothorax, scutellum, apical half of penultimate, the whole of the last segment, the sides of the 3rd and following ventral segments, the penultimate in the middle and the last entirely, black; the rest of the abdomen, the legs and median segment bright rufous; the head pale yellow; the wings fuscous, the nervures and stigma black. ♀.

Length 10 m.m.; terebra 7 m.m.

Etna Bay.

A short broad species; the head large, cubital, the abdomen short and broad; the whole insect smooth and shining; the head, pleuræ, median segment and legs densely covered with longish white pubescence. Basal segment of abdomen sessile, short; the centre finely longitudinally striated; the area on the 2nd segment is large, shining, obscurely striated; roundly narrowed towards the apex, which is bluntly rounded; its bordering furrow is narrow and smooth; the oblique lateral furrow is narrow, shallow and obscurely crenulated; suturi-

form articulation wide, moderately deep and crenulated; there is a narrow, smooth transverse furrow on the base of the 3rd segment. Hypopygium large, sharp pointed at the apex. There is a wide depression, twice longer than wide, on the upper half of the face below the antennæ; into the centre of its apex projects a Δ -shaped process, with a hollow in the centre. Palpi pale fulvous. Mandibles fulvous, black at the apex.

The head in this species is large, more cubital, more developed behind the eyes than it is in the *Braconini*, more as in the *Hecabolini*.

Bracon etnaellus sp. nov.

Ferruginous, the antennæ, head, mandibles, the apex of the 4th and the whole of the following abdominal segments, the apex of the hinder tibiæ from near the middle, the apical half of the 1st joint of the hind tarsi and the whole of the others, black; wings yellowish hyaline, a broad band extending from the lower part of the transverse basal nervure to the base of the stigma, and one on the apex, commencing near the base of the radius, and bearing a hyaline cloud in the radial cellule in front of the 2nd transverse cubital cellule, dilated more towards the apex than to the base, and extending backwards on eitherside of the 2nd transverse cubital nervure to the cubitus; the hind wings are for the greater part fuscous, the base in front to the commencement of the radial nervure and an irregular mark, not much longer than wide and rounded behind, at the stigma, yellowish hyaline, obscured with fuscous. ♀.

Length 14 m.m.; terebra 20 m.m.

Etna Bay. Merauke.

Long and slender, the abdomen more than twice the length of the thorax; smooth, shining, almost bare. Down the centre of the face is a deep, wide furrow, which becomes triangularly

widened at the apex; the keels bordering it are broad, rounded; at the apex they roundly diverge. Metanotum with a band of longitudinal striæ near the middle. First abdominal segment closely longitudinally striated; the area on the 2nd segment is long, becomes gradually narrowed to a sharp point which reaches to the base of the apical fifth of the segment; at the broad base it is smooth, the rest is closely, finely longitudinally striated; the part bordering it is more roughly and irregularly striated; the suturiform articulation is deep, closely crenulated; shortly beyond it is a furrow, which curves roundly backwards to a rounded point, it is crenulated, except at the sides; there is a similar, crenulated furrow at the base of the 4th segment, with a broadly curved one on either side. The 2nd cubital cellule is much narrowed in front, owing to the steep, oblique slope of the 1st transverse cubital nervure; the 1st abscissa of the radius is longer than usual; it is more than half the length of the 2nd; the 3rd is shorter than the basal 2 united; the recurrent nervure is received in the 1st cubital cellule, clearly distant from the transverse cubital; the anal nervure issues distinctly above the lower part of the nervure, not interstitial with it.

Exothecinæ.

Siragra gen. nov.

Head cubital, largely developed behind the eyes. Metanotum with an areola, lanceolate above, on its apical half. Second abdominal segment with a narrow, but distinct, semicircular furrow; the segments smooth. Radial cellule long, reaching to the apex of the wing; the radius issues from very shortly behind the middle of the stigma, which is long and narrow. The third abscissa of the radius is more than twice the length of the basal two united; the 1st about one fourth of the length of the 2nd; the recurrent nervure interstitial. The 2nd

discoidal cellule is closed. Mesonotum clearly trilobate; the middle lobe raised. Mesosternum bordered by a distinct furrow. Fifth tarsal joint shorter than the preceding two united, as long as the third. The body is smooth and shining, the antennæ are long, filiform, the apex of the scape below projects into a stout tooth.

This genus, in the arrangement of Szépligeti (Gen. Hym. p. 46), comes nearest to *Exobracon*, which was based on a Papuan Insect, *Bracon quadriceps* Smith; *Exobracon* should be known by the pleuræ not being furrowed, by the radius not reaching to the apex of the wing, by the small stigma and by the last tarsal joint being as long as the preceding 2 united.

Siragra nitida sp. nov.

Red, the antennæ and abdomen black, the hind tibiæ slightly, the hind tarsi more distinctly infuscated, the apices of the abdominal segments slightly lead coloured, the sides and ventral surface thickly covered with white pubescence; wings uniformly fuscous, highly iridescent, the nervures and stigma black. ♀.

Length 10 m.m.; terebra 7 m.m.

Etna Bay.

Face finely rugose, almost opaque, thickly covered with longish fuscous pubescence; the rest of the head and thorax smooth and shining; the metanotum is more densely pilose and with the pile longer than it is on the rest of the thorax. Temples nearly as long as the eyes, rounded. Palpi long, pale testaceous. Mesonotum clearly trilobate, the central lobe raised and with an indistinct, narrow furrow down the centre. The apex of the metanotum is finely, closely punctured; in its centre is an area, not very clearly defined, whose upper half is narrowed to a sharp point; the lower of equal width. Abdomen smooth, shining for the most part; the first segment

is fully twice longer than it is wide at the apex; the suturiform articulation is narrow, smooth, roundly curved; there are no other transverse furrows, nor any oblique ones.

Pimplinæ.

Pimplini.

Certonotus labialis sp. nov.

Ferruginous, the face paler, more yellowish in tint, as are also the outer orbits; the flagellum of antennæ, the 2nd and following segments of the abdomen, the hinder trochanters, femora, tibiæ and tarsi, black; wings fuscous violaceous, the nervures and stigma black. ♀.

Length 13; terebra 12 m.m.

Merauke.

Face smooth; from each antennæ runs a row of 6 round punctures, with 2 on the outerside below the apex and, on the innerside, above there is another; the centre of the face on the lower half and the innerside of the malar space are closely finely longitudinally striated; there is a double row of punctures on the top of the clypeus, the upper being the larger. There is a wide shallow furrow on the malar space. Striæ on mesonotum irregular, moderately stout, wrinkled. Basal half of scutellum closely, rugosely punctured, this part being bordered behind by a transverse keel; the apical part is stoutly transversely striated; the post-scutellum is bordered behind by a curved keel; it is finely, closely transversely striated. Metanotum smooth and shining; the central area is large, wide, reaching from the base to the apex; it bulges out angularly in the middle; it is bounded by 2 lateral areæ, the upper is wider than long and projects over the lower one, which is longer than wide; there is a not very distinct keel outside the spiracles. Propleuræ and upper part of meso-

pleuræ smooth; the lower part of the latter weakly, the meta-pleuræ more strongly punctured. Abdomen smooth and shining. Areolet triangular, the nervures touching above; the recurrent nervure is received close to its apex; it is angled backwards in the middle; the disco-cubital nervure is broken by a short stump of a nervure; the transverse median nervure is received shortly behind the transverse basal.

The abdominal segments are very narrowly lined with white at the apex; the 6th has a small rounded incision in the middle; the next has a larger and wider, more triangular incision. The clypeus is large, wide, of equal width throughout, transverse above, below not so transverse, forming a broad, rounded curve; the labrum large, semicircular, the apex being broadly rounded. Malar space as long as the antennal scape. There are no parapsidal furrows; the angles of the pronotum are broadly rounded. Trophi long, the palpi slender. There is a distinct fovea near the base of the hind tibiæ. The middle tarsi are fuscous. Process of the 8th segment broad, bluntly rounded.

This species comes very close to *C. seminiger* Krieger; and I was at first inclined to regard it as identical with that species. For one thing there is a distinct difference in the form of the labrum as described by Krieger in his Monograph of the genus (Zeits. f. Hymen. u. Dipt. 1901, p.p. 113—126); it is described as "triangular" and, at least in the 2 species figured on pl. 11, it is shown as gradually narrowed from the base to the apex, not semicircular as in my species.

Echthromorpha insidiator Smith.

Pimpla insidiator Smith, Journ. Linn. Soc. 1864, 9; Snellen van Vollenhoven, Stett. Ent. Zeit. 1879, 149.

Echthromorpha insidiator Krieger, Bericht. d. Naturf. Gessel. zu Leipzig, 1898, 54.

Merauke.

Xanthopimpla Sauss., sec. Krieger.

Smith, in his Series of papers on the Hymenoptera collected by A. R. Wallace in the Malay Archipelago, describes a large number of yellow or testaceous species under *Pimpla*, which doubtless belong to *Xanthopimpla*, but so badly and with so little attention to structure or form that it seems utterly impossible to identify his species without an inspection of the types from which the species were described. Very possibly only a few of his numerous species of *Pimpla* belong to *Pimpla* as now restricted; most of them are to be referred to *Xanthopimpla* and some to *Echthromorpha* and *Theronia*.

a. *Areola open laterally at the apex.*

1. Abdomen maculate with black.

Beauforti and *papuana*.

2. Abdomen not maculate with black . . *Sulcata*.

Xanthopimpla beauforti sp. nov.

Luteous, the head and pleuræ pale yellow, 2 marks on the 3rd, 4th and 5th abdominal segments and two broad, almost united, ones on the 7th, and the ovipositor black; wings hyaline, the apex smoky, the stigma and nervures black; the ovipositor as long as the basal 2 joints of the tarsi. ♀.

Length 12; terebra 1 m.m.

Etna Bay. Merauke.

Basal 2 keels on metanotum roundly curved, not united to the posterior by longitudinal keels. Parapsidal furrows reaching to the middle. Mesopleuræ smooth above, closely, distinctly punctured below. First abdominal segment smooth, fully one half longer than it is wide at the apex; the basal keels weak, narrow, only indicated on the basal slope; the 2nd segment slightly longer than wide, punctured, smooth at the base and down the middle, the 3rd square, the others broader;

the 3rd, 4th and 5th are closely, strongly punctured. Areolet 4-angled, shortly, but clearly appendiculated. Basal half of mesonotum closely punctured in the middle, the apex and sides smooth.

The ♂ is similarly coloured, except that the 6th segment bears 2 transverse marks; the last segment is broadly black at the base.

Xanthopimpla papuana sp. nov.

Length 12 m.m.; terebra 1 m.m. ♀.

Etna Bay.

Very similar to *X. sulcata*, but paler; the 2 may be separated thus:

Ovipositor as long as the tarsi; the basal keels of metanotum roundly curved on the innerside; basal segment of abdomen hardly one half longer than the width at the apex. *Sulcata*.

Ovipositor as long as the basal 2 joints of the tarsi; the basal 2 keels of metanotum straight, oblique on the innerside, the basal segment of abdomen about twice longer than the width at the apex. . . *Papuana*.

Face closely punctured, not much longer than wide; apex of clypeus slightly rounded inwardly. Labrum large, longer than the width at the base, gradually roundly narrowed to a point, curled outwardly at the apex. Parapsidal furrows deep, not reaching to the middle, the basal half of middle lobe closely punctured, the rest of the mesonotum smooth. Scutellar keels broad, narrow, of equal height. There is a short stump of a keel at the end of the inner angle of the basal keel, the areola thus being only open laterally at the apex; the spiracular area is not defined. The abdominal segments are rufous testaceous in the middle, the base and apex of the segments are pale yellow; the 1st is longish but not twice longer than

it is wide at the apex; the basal central keels reach to the middle; it is smooth; the 2nd is strongly, but not closely, punctured except in the middle; the 3rd to 5th are closely, distinctly punctured; the 6th is more weakly punctured, the apical smooth, the transverse furrows are narrow, shallow, weakly crenulated. There are 2 transverse, oval marks on the base of the 3rd segment, 2 fuscous ones on the base of the 4th, and indications of 2 marks on the 5th. The 2nd segment is almost square, the others are broader than long, becoming gradually shorter compared with the width; the 8th is slightly longer than the 7th. On the apex of the hind tibiae, on the outer side, are 5 stout spines in a row; outside the basal and 3rd is a similar spine. Antennae reddish brown, darker above. Areolet wide, 4-angled, almost appendiculated; the recurrent nervure is received shortly beyond the middle. Ocelli black. Occiput pale yellow. Mesopleurae, except behind, closely, strongly punctured.

Xanthopimpla sulcata sp. nov.

Reddish luteous, the pleurae and ventral surface pale yellow; the ocelli and small spots on the 3rd and 4th abdominal segments black; wings hyaline, the apex narrowly infuscated, the stigma and nervures black; the metanotum with 2 curved keels on the sides at the base, forming large areae, dilated on the outerside; there is a transverse keel across the top of the metanotum, there being no areola; ovipositor slightly longer than the hind tarsi. ♀.

Length 12 m.m.; terebra 4 m.m.

Merauke.

Face slightly longer than wide, its middle slightly dilated; it is irregularly shagreened and punctured. Apex of clypeus transverse; it is roundly dilated above, the apex depressed, the foveae deep. Mesonotum smooth and shining; the furrows

are deep and extend beyond the middle to the apical fourth. Scutellum smooth, broadly, roundly convex; the lateral keels not high, of equal height; metanotum very smooth and shining; the sides are bordered by a keel. Propleuræ weakly, the mesopleuræ more strongly and distinctly punctured; the metapleuræ smooth, impunctate. First abdominal segment longer, but not very much, than the width at the apex, smooth; the sides of the basal depression keeled. The 2nd, 3rd and 4th segments are closely punctured; their apical transverse furrows are shallow, crenulated, but not strongly or closely; the 5th and 6th are more weakly punctured, the apical smooth; the lateral transverse furrows on the basal 6 segments are deep. There is a narrow, indistinct keel below the spiracles, the spiracular area not being defined. The hind tibiæ are not spined; the tarsi are spined at the apex. Areolet shortly but distinctly appendiculated, the cubitus roundly curved, receiving the recurrent nervure in the middle. Occiput pallid yellow, immaculate. Mesopleuræ with a narrow, shallow longitudinal depression below the tegulæ.

Belongs to Krieger's Section A. *a*. The metanotal keels are as in Krieger's figure of *X. octonotata* l. c. fig. 12. The group of that species (Krieger's group D) — those with only transverse keels — contains chiefly African species.

b. Areola closed laterally at the apex.

Areola longer than wide, 1st segment immaculate

					<i>flavolineata</i>
»	wider	»	long	»	maculate
					<i>basimacula</i>

Xanthopimpla flavolineata sp. nov.

Head, pleuræ, scutellum, metanotum and the apices of the abdominal segments narrowly, pale yellow; the mesonotum and abdomen above, except the apices of the segments, reddish

yellow or orange, the antennæ reddish brown; the ocelli and ovipositor black; the ovipositor as long as the basal 2 joints of the hinder tarsi united; wings hyaline, the apex feebly infuscated; the stigma testaceous, the costa and nervures black; areola large, 6-angled; the tooth-bearing area 4-angled. ♀.

Length 9 m.m.; terebra 1 m.m.

Merauke.

Face and clypeus smooth; the former not much dilated. Parapsidal furrows short, one-third of the length of the mesonotum, not extending beyond the basal slope. Mesopleuræ finely punctured on the basal half. Scutellar keels moderately strong. Metanotal keels not very strong; the areæ large; the tooth-bearing area large, wide, 4-angled, not much longer than wide, widest on the outerside; it is wider than usual compared with the length. First abdominal segment almost twice longer than it is wide at the apex; the keels on the basal slope only; it is smooth; the 2nd and following segments are wider than long, the 2nd being wider compared with the length than the others; it is smooth, sparsely punctured in the middle; the 3rd and 4th are somewhat strongly, the 5th more weakly punctured; the others smooth. Areolet 4-angled, shortly, but distinctly, appendiculated. The areola is much longer than wide.

Belongs to Krieger's group H and comes near to *X. crassa* Kr.

Xanthopimpla basimacula sp. nov.

Pale luteous, the back of the abdomen orange coloured, the ocelli, a large mark, wider than long and of equal width near the middle of the 1st abdominal segment, 2 marks, wider than long, on the 3rd, 4th, 5th and 6th, the marks on the latter smaller than on the others and a large, broad transverse mark, its sides rounded, its apex in the middle slightly roundly incised, on the 7th, black. Wings hyaline, the stigma and nervures black; the areolet 4-angled, shortly, but distinctly, appendiculated.

Areola small, wider than long, 4-angled. ♂.

Length 10 m.m.

Merauke.

Parapsidal furrows short, on basal slope only, gradually narrowed towards the apex. The entire thorax is impunctate, shining. Tooth-bearing area narrowed gradually from the outer to the inner side, the keels closely approximating. First abdominal segment longer by about one fourth than it is wide at the apex; the keels are more distinct than usual and extend beyond the middle; the 2nd is slightly longer than broad; the 3rd almost square, the others wider than long. Antennæ brownish, black above; the scape yellow below. Scutellar keels not very strong. Head strongly, roundly narrowed behind the eyes.

In Krieger's table (*l. c.*) p. 68, this species would come near *X. australis* Kr. and *X. similis* Kr., both from Australia. The metanotal areae are as in *X. australis* as shown in Krieger's fig. 11.

There is a small ♂ specimen from Etna Bay (8 m.m.) which may represent another species. Unfortunately the pin goes through the areola. There is on it, an irregular transverse stripe on the mesonotum between the tegulae, the black marks on the abdomen are larger than they are on the type; the marks on the 3rd segment are larger than they are on the other segments, and the single mark on the 1st has the sides rounded; the large apical mark has the apex transverse.

Ophioninæ.

Ophionini.

Eniscospilus melanarius sp. nov.

Black; the face, clypeus, mandibles except at the apex, palpi, outer orbits, antennæ and legs, except the coxæ, pale testaceous, the oral region paler coloured than the rest; the

pronotum with a large triangular mark above, a line, widest above, on the base of the mesopleuræ, a narrow line across the middle of the base of metanotum, an irregular line running down from its outer side, the 2 uniting at the apex and, laterally, extending on to the sides, reddish brown. Wings clear hyaline, the stigma and nervures fulvo-testaceous. ♀.

Length 23 m.m.

Etna Bay.

Face shagreened. Front striated below the ocelli, which are black. Pro- and mesothorax smooth, the lower part of mesopleuræ stoutly, but not closely, longitudinally striated. The keels on the scutellum extend to the middle of the apical slope; the apical half of the apical slope is longitudinally striated. The top of the apical slope of the metanotum is bordered by a transverse keel; beyond this keel the segment is ornamented by stout, mostly roundly curved striæ, the central part being almost bordered by stout longitudinal striæ, the metapleuræ stoutly irregularly, obliquely striated. There is only one horny point in the fore wings; it is transverse, oval.

Campoplegini.

Devorgilla gen. nov.

Areolet triangular, shortly appendiculated, receiving the recurrent nervure near the apex; transverse median nervure interstitial; transverse median nervure in hind wings unbroken; the apical nervures obsolete. Abdominal petiole long, cylindrical, the apical third abruptly dilated; the spiracles are placed at the base of the dilated apex; the basal part is of equal width throughout. Clypeus not separated from the face by a suture. Temples rounded; occiput distinctly roundly incised. Median segment longish, gradually narrowed towards the apex; regularly areolated; there is a distinct petiolar area; the areola is not separated from the posterior median

area, there are 2 lateral areæ, the 2nd (and larger) extending closely to the middle of the posterior median; the 3rd lateral is not clearly defined; the spiracles are longish oval. Claws small, not pectinated. Eyes large, parallel, not incised, bare.

The apex of clypeus broadly rounded; there is a small, but distinct, malar space; mandibles broad, with 2 equally sized teeth. Scutellum roundly convex, its sides not margined. Post-scutellum large, flat. Median segment thickly covered with long white pubescence. The 1st segment is as long as the following two united; the 2nd nearly twice the length of the 3rd.

Comes nearest, in Ashmead's system (Bull. U. S. Nat. Mus. XXIII, 91), to *Amorphota* Foerster. The long, cylindrical narrow abdominal petiole, abruptly dilated at the apex, forms a good distinguishing characteristic.

Devorgilla dilatata sp. nov.

Black, the mandibles, palpi, anterior coxæ, trochanters and tegulæ pale yellow; the 4th and following segments of the abdomen red; 4 anterior femora, tibiæ and tarsi rufous, the tibiæ yellowish in front, the 4 hinder coxæ, the hind femora, tibiæ and tarsi, black. Wings hyaline, the nervures and stigma black. ♂.

Length 12 m.m.

Merauke.

Scape of antennæ yellowish, the flagellum brownish below. Head and thorax alutaceous, opaque, thickly covered with white pubescence; the mesopleuræ closely distinctly punctured; the depression on propleuræ irregularly striated; the areola and posterior median areæ stoutly, closely, and posteriorly, irregularly, transversely striated. Calcaria whitish, the hinder darker coloured. The 2nd and 3rd ventral segments are pale yellow, the rufous apical are narrowly lined with yellow at the apex. The wings are colourless and iridescent. Antennæ longer than the body.

Cryptinæ.

Mesostenini.

Mesostenus unicarinatus sp. nov.

Black, the face, a large, semicircular mark on the clypeus, not extending to its apex — not much beyond the middle —, and with a slight incision in its middle, the labrum, except for a line on its base in the middle, the upper inner and the whole of the outer orbits — the line broad except on top of the outer — palpi, tubercles, tegulæ, scutellum, apex of post-scutellum, a large mark on the apical slope of the metanotum, narrowed and bilobate above, a squarish mark on the apex of mesopleuræ below, a smaller mark on the apex of the metapleuræ, longer compared with the width and rounded at the base, the usual mark (it is longer than usual) below the hind wings, the basal third of the 1st abdominal segment, a narrower band on its apex, still narrower bands on the apices of the 2nd to 5th and the 6th, except for a semicircular mark on its basal half, the 2nd ventral segment entirely, the apices of the 3rd to 5th narrowly and the last broadly in the centre, pale yellow. Legs bright red; the 4 anterior coxæ and trochanters; the anterior femora and tibiæ in front, the middle tibiæ in front and the base behind, the hind coxæ at the base above and below, the base of the hind tibiæ and a line on the top of the basal joint of the hind tarsi, pale yellow; a short line on the outerside of the hind coxæ at the apex, a larger spot on their outer and innerside at the base, the apex of the hind tibiæ and the hind tarsi, black. Wings hyaline, a slight cloud at the apex; the nervures and stigma black. The 7th to the 11th joints of the antennæ are clear white. ♀.

Length 12—14 m.m.; ovipositor 4—5 m.m.

Etna Bay.

Head smooth, the face sparsely and weakly, the clypeus more thickly and strongly punctured. Mandibles with a red spot on the base above. Mesonotum closely and finely punctured, more closely at the apex than at the base; the furrows do not extend much beyond the middle. There is only one transverse keel on the metanotum; it is placed shortly behind the top of the apical slope; the extreme base of the segment is smooth; it is irregularly longitudinally closely striated on either side of the keel; the apical slope is more strongly transversely striated; the only keel is not dilated laterally and there are no spines. Pro- and mesopleuræ finely punctured; the former with a striated band down the hollow; the metapleuræ more strongly and closely punctured and more or less striated towards the apex. Areolet minute, square, receiving the recurrent nervure at the apex. Hind tibiæ sparsely, their tarsi more thickly spinose.

The black marks on the hind coxæ are absent from the smaller specimen. There is no area on the base of the metanotum. The keel between the 2 hinder coxæ is narrow, not dilated and is complete. This is a *Mesostenus* as defined by Ashmead (Proc. U. S. Nat Mus. XXIII, 44) it having the metathorax unarmed. It differs from the typical species in having only one transverse keel on the metanotum.

Neomesostenus? interstitialis sp. nov.

Black, the upper half of the inner eye-orbits, the marks narrow below, gradually widened above into a wide triangle, the two uniting on the hinder edge of the vertex, the yellow extending on to the occiput, the labrum, scutellum, a broad band on the middle of metanotum covering the spines, roundly dilated behind and extending on the sides near to the bottom, becoming gradually narrowed below; the narrowed base of the 1st abdominal segment to near the middle, almost the whole

of the dilated apex, a broad band on the apex of the 2nd, a band on the middle of the apex of the 5th, a broader, longer one on the 6th, and one on the 7th, running from side to side, and a large, somewhat triangular, mark below the hind wings, pale yellow. Four anterior coxæ and trochanters pale yellow; their femora and tibiae pale fulvous, the tarsi black, the hind coxæ black, yellow to shortly beyond the middle above, the basal joint of the trochanters black, the apical dark red, the femora bright red; the tibiae dark fuscous, blacker towards the apex; calcaria black; basal joint of tarsi white, a narrow black band at the base, a narrower one at the apex, and the other joints, except the 2nd at the base, black. Wings hyaline, a small cloud at the apex; the nervures and stigma black. The 6th to 15th joints of the antennæ are white below. ♀.

Length 9 m.m.; terebra 3 m.m.

Etna Bay.

Front and vertex aciculated, shining; a short striated band above each antenna; a narrow, but distinct, keel runs down the centre of the front. Face separated from the clypeus; opaque, granular; clypeus shining. Pronotum dilated into a shining tubercle at the tegulæ. Mesonotum finely and closely punctured; the furrows are on the basal two-thirds, are narrow, distinct, moderately deep. There is only the basal keel on the metanotum; the part behind it is finely closely striated in the centre; the sides are much more strongly striated and they interlace; the rest is closely, but not very strongly reticulated. The curved central depression on the propleuræ is closely striated; the part above it is sparsely punctured; mesopleuræ closely, distinctly punctured, more or less striated along the furrow. Metapleuræ closely, moderately strongly, obliquely punctured, the punctures running into striæ above. Metanotal spines short, stumpy, distinct. Abdomen smooth and shining; the petiole long, narrow; the apical third dilated, but not widely; it is longer than the width of the apex. There

is only a short, thickened transverse cubital nervure with which the recurrent nervure is interstitial; the transverse median nervure is received beyond the transverse basal; the transverse median nervure in hind wings is angled and broken shortly below the middle. The eyes are large, parallel; the malar space is minute; the temples are almost obliterated.

In the table of *Mesostenini* given by Prof. Schmiedeknecht (Opus. Ichn. p. 562) this species runs into *Neomesostenus* Schm.

Cryptinini.

Colganta Cam.

The Entomologist, 1902, p. 20.

Colganta sciaria Smith.

Cryptus sciarius Smith, Journ. Linn. Soc. IV, 138; *Cryptus tarsatus*, Smith, l. c. 1861, 7. ♂.

Etna Bay.

The basal 7 joints of the antennæ are ferruginous, the 8th to 14th or 15th are tinged with yellow, the rest are black. Face slightly tinged with yellow, densely covered with short, pale pubescence; the clypeus is not separated from the face; the clypeus somewhat strongly, but not closely punctured; its apex is transverse, with a small tubercle at the apex in the centre; the lateral foveæ are deep, large. Scutellar lateral keels stout, extending near to the middle. Metanotum closely rugosely punctured; striated transversely on the outer sides; the transverse keel is stout on the outerside, almost obliterated in the centre of the segment; from its outer edge two oblique, twisted keels run towards the apex on the sides of the apical slope. The wings are yellowish hyaline, paler at the apex; there is a fuscous violaceous cloud extending from the commencement of the radius to shortly beyond the 2nd transverse cubital nervure. ♀.

Length 17; terebra 4 m.m.

Smith's description is not good, but so far as it goes it suits the *Colganta* from Etna Bay. The female is recorded by Smith from Dory, New Guinea, Bachian and the supposed ♂ (*tarsatus*) from Mysol. The abdominal segments in the Etna Bay examples bear broad pruinose white bands.
